The RF Line NPN Silicon High-Frequency Transistors

Designed primarily for use in high-gain, low-noise, small-signal UHF and microwave amplifiers constructed with thick and thin-film circuits using surface mount components.

• T1 suffix indicates tape and reel packaging of 3,000 units per reel.

MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	VCEO	15	Vdc
Collector-Base Voltage	Vcво	20	Vdc
Emitter-Base Voltage	V _{EBO}	2.0	Vdc
Collector Current — Continuous	lC IC	25	mAdc
Maximum Junction Temperature	T _{Jmax}	150	°C
Power Dissipation, T _{Case} = 75°C Derate linearly above T _{Case} = 75°C @	P _{D(max)}	0.273 3.64	W mW/°C

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit	
Storage Temperature	T _{stg}	-55 to +150	°C	
Thermal Resistance Junction to Case	$R_{\theta JC}$	275	°C/W	

DEVICE MARKING

BFR92ALT1 = P2

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

BFR92ALT1

RF TRANSISTORS
NPN SILICON



CASE 318–08, STYLE 6 SOT–23 LOW PROFILE

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				·
Collector–Emitter Breakdown Voltage (1) (I _C = 10 mA)	V(BR)CEO	15	_	Vdc
Collector–Base Breakdown Voltage (I _C = 100 μA)	V(BR)CBO	20	_	Vdc
Emitter–Base Breakdown Voltage (I _C = 100 μA)	V(BR)EBO	2.0	_	Vdc
Collector Cutoff Current (VCB = 10 V)	Ісво		50	nA
ON CHARACTERISTICS			***************************************	<u> </u>
DC Current Gain (I _C = 14 mA, V _{CE} = 10 V)	hFE	40	_	_
Collector–Emitter Saturation Voltage (1) (I _C = 25 mA, I _B = 5.0 mA)	VCE(sat)		0.5	Vdc

V_{BE(sat)}

NOTE:

1. Pulse Width \leq 300 μ s, Duty Cycle \leq 2.0%.

Base-Emitter Saturation Voltage (1)

 $(I_C = 25 \text{ mA}, I_B = 5.0 \text{ mA})$

(continued)

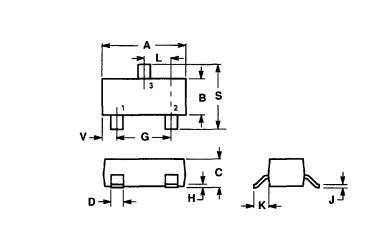
Vdc



ELECTRICAL CHARACTERISTICS — continued (TA = 25°C unless otherwise noted)

Characteristic	Symbol	Тур	Unit
SMALL-SIGNAL CHARACTERISTICS			
Current–Gain — Bandwidth Product (IC = 14 mA, V _{CE} = 10 V, f = 500 MHz)	fŢ	4.5	GHz
Noise Figure (V _{CE} = 1.5 V, I _C = 3.0 mA, R _S = 50 Ω , f = 500 MHz)	NF	3.0	dB
Capacitance-Collector to Base (V _{CB} = 10 Vdc, f = 1.0 MHz)	C _{cb}	0.7	pF

PACKAGE DIMENSIONS



NOTES

- 1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982. CONTROLLING DIMENSION: INCH
- MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS. IS THE MINIMUM THICKNESS OF BASE MATERIAL.

	INCHES		MILLIN	ETERS
DIM	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
В	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
٥	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
7	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
s	0.0830	0.1039	2.10	2.64
٧	0.0177	0.0236	0.45	0.60

STYLE 8:

PIN 1. BASE

EMITTER

COLLECTOR

CASE 318-08 ISSUE AF

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